

**REMARKS/ARGUMENTS**

Reconsideration of this application is requested. Claims 39-66 and 71-75 are in the case.

Claims 39-66 and 71-75 stand rejected under 35 U.S.C. §103(a) as allegedly unpatentable over U.S. Patent 5,179,056 to Bartley. That rejection is respectfully traversed.

The invention is directed to a process for preparing a catalyst active for the fluid bed acetoxylation of ethylene to produce vinyl acetate. The process comprises the steps of (a) impregnating microspheroidal silica support particles by the incipient wetness technique with an aqueous solution of palladium and gold compounds, whilst agitating the support particles; (b) drying the impregnated support particles produced in step (a) whilst agitating the impregnated support particles; (c) reducing the palladium and gold compounds of the impregnated support particles produced in step (b) to respective metals by adding the dried, impregnated support particles to an aqueous solution of hydrazine, whilst stirring, to form a slurry; (d) filtering the slurry produced in step (c) to remove the excess reduction solution; (e) washing the filter cake/slurry produced in step (d) with water and removing excess water to form a cake; (f) impregnating the cake produced in step (e) with one or more salts of Group I, Group II, lanthanide and transition metals by blending the cake produced in step (e) with one or more solid salts of Group I, Group II, lanthanide and transition metals; and (g) drying the impregnated cake produced in step (f) whilst agitating the impregnated cake to form free-flowing catalyst particles.

Bartley discloses a method of preparing a catalyst for catalyzing the reaction of an alkene, alkenoic acid and an oxygen containing gas to produce an alkenyl alkanoate such as vinyl acetate (see column 5, lines 15-35). The Action cites various paragraphs from Bartley but provides no reasoning as to why Bartley renders the present invention obvious. However, there are significant differences between the preparation method of Bartley and that of the present invention.

In step (a) of Bartley, support particles are impregnated with solutions of gold and palladium. The support particles are taught as having a diameter in the range 3 to about 7 mm (col. 7, lines 42-43), and the support particles used in the Examples have a diameter of 5 to 6 mm (col. 8, lines 41-42).

In contrast, the support particles employed in claimed process of the present invention are microspheroidal (i.e., they have a diameter of less than 300 nm). Thus, the support particles used in the present invention are substantially smaller than those of Bartley. There is no suggestion in Bartley of the use of microspheroidal support particles.

In step (a) of the presently claimed invention, the support particles are agitated **during** the impregnation step, for example, in a blender. In the Example of Bartley (col. 8, lines 19-25), the support particles are added to a solution of palladium and gold compounds and **the resulting mixture agitated** until all of the moisture is absorbed into the support and **then allowed to stand so as to impregnate** the support with the palladium and gold. Thus, Bartley provides no suggestion of agitation during impregnation with palladium and gold salts.

In the presently claimed invention, the particles after impregnation are again agitated during a drying step and then the dried particles are added to a hydrazine solution. In Bartley, a precipitating agent is added to the impregnated particles, and a solution of a reducing agent such as hydrazine is then added to the impregnated support particles (col. 5, lines 19-25; col. 9, lines 26-36). Thus, Bartley has no suggestion of drying of the impregnated particles prior to the reduction step. Furthermore, there is no suggestion in Bartley that the impregnated particles should be agitated during drying. Agitation during drying is intended to prevent metal from migrating to the surface of the particle.

In Bartley, the hydrazine is added to the impregnated particles whereas in the present invention, the impregnated particles are added to the hydrazine. The benefit of adding the particles to the hydrazine in the present invention (rather than the other way around as in Bartley) is that the catalyst so produced has a layered structure wherein the palladium and gold are distributed in a layer below the surface of the particle, the layer being between an inner and an outer region of the support particle. This provides an advantage in that the outer layer acts as a protective layer thereby serving to reduce the loss of palladium and gold through attrition during the production of vinyl acetate (page 6, lines 31-32; page 7, lines 1-16). In contrast, the catalysts produced by Bartley are of the shell type wherein the palladium and gold are distributed in a layer at the surface of the support particle, (col. 7, lines 40-41; col. 9, lines 56-58). Thus, the method of Bartley and the method of the present invention produce **structurally different** catalysts.

In step (f) of the present invention, the cake produced in step (e) from which excess water has been removed but which is still wet is blended with a solid salt such as a potassium salt. This method of blending a wet cake with a solid salt avoids the need to dry the particles prior to impregnation with a solution of a salt (page 9, lines 7-10). Bartley, on the contrary, distinctly provides that the support particles are dried prior to impregnation with a potassium solution (col. 5, lines 27-29; col. 9, lines 44-50).

In the present invention, the impregnated cake is dried whilst agitating the cake. There is no disclosure or suggestion in Bartley that the impregnated particles should be agitated during drying. Agitation of the cake ensures a uniform distribution of the salt within the particles.

It is clear from the above that the methodology employed in the claims of the present application is in no way disclosed or suggested by Bartley. Furthermore, there would have been no motivation for one of ordinary skill to modify the method of Bartley and, consequently, arrive at the methodology of the present invention. Absent any such motivation, a *prima facie* case of obviousness has not been generated in this case. Reconsideration and withdrawal of the outstanding obviousness rejection are accordingly respectfully requested.

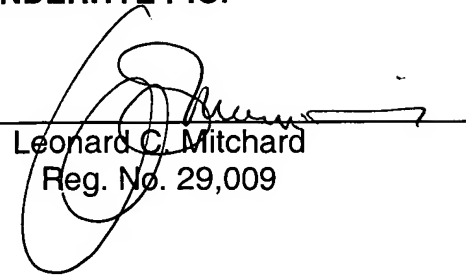
Favorable action on this application is awaited.

BAKER et al  
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Respectfully submitted,

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